PSY25

COST-EFFECTIVENESS OF NONINVASIVE MAGNETIC RESONANCE DIRECT THROMBUS IMAGING AND ULTRASONOGRAPHY FOR DIAGNOSING DISTAL DEEP VEIN THROMBOSIS

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OBJECTIVES: Proper diagnosis of Deep Vein Thrombosis (DVT) at the earliest time is very important so that appropriate therapy can be initiated. Ultrasonography is the most widely used diagnostic technique. Noninvasive magnetic resonance direct thrombus imaging (MRDTI) is a new diagnostic technique that has higher sensitivity and specificity compared to Ultrasonography for distal deep vein thrombosis (DVT). The objective is to identify the most cost-effective strategy for diagnosis of distal deep vein thrombosis. **METHODS:** A decision-analysis model was constructed using TreeAge Pro software and analyzed using second-order Monte Carlo simulation technique. Diagnostic accuracy was calculated using Bayes' revision method that utilized sensitivity and specificity of the diagnostic tests along with the pretest probability of developing the disease. Outcomes considered were costs, adverse events and quality of life. Quality-adjusted life years were calculated using life expectancy tables. Where applicable, costs in pounds were converted to US dollars and adjusted through use of Consumer Price Index data from Bureau of Labor Statistics. Net benefit of each strategy was analyzed at different willingness to pay (WTP) thresholds ($0 to $150,000) to determine the most cost-effective strategy. **RESULTS:** Noninvasive MRI is the optimal strategy for diagnosis of distal DVT at all WTP thresholds greater than $25,000. No diagnosis strategy was the most cost-effective strategy when threshold was below $25,000. Sensitivity analysis showed that noninvasive MRI remained cost-effective even when all costs were varied by 25%. The model results were affected by the sensitivity of the diagnostic tests. **CONCLUSIONS:** For base-case scenario, noninvasive MRI is the most cost-effective strategy. Considering the cost-effectiveness and the fact that ultrasonography has higher mortality compared to noninvasive MRI, employing noninvasive MRI appears to the optimal strategy. Health care providers should consider patient population distribution among the risk groups defined by Wells score for generalizing the study results to their setting.

PSY26

COST-EFFECTIVENESS OF SEVELAMER IN THE TREATMENT OF HYPERPHOSPHATEMIA ASSOCIATED WITH CHRONIC KIDNEY DISEASE IN BRAZIL

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OBJECTIVES: The chronic kidney disease (CKD) is associated with an abnormally elevated level of phosphate in the blood, which contributes to the presence of vascular calcifications, thus increasing the probability of the occurrence of cardiovascular events and death in these patients. The objective of this analysis was to evaluate the incremental cost-effectiveness of the use of sevelamer to manage hyperphosphatemia in Brazil **METHODS:** A Markov model was created to estimate the monthly costs and benefits of the treatment with sevelamer or calcium tablets in patients with renal failure considering a temporary horizon of 60 months. The transition probabilities were taken from clinical trials identified through a systematic review of literature. The effectiveness measure considered was an increase in patient survival (months). Only direct costs were considered . Costs were calculated using 2009 prices and are expressed in US dollars. In addition, univariate sensitivity analysis and scenario changes were performed. The discount rate was 5%. **RESULTS:** The expected cost was US$37,477 for calcium and US$58,397 for sevelamer. Patients in calcium group would survive 51 months, compared to the sevelamer group (54 months). The Cost-Effectiveness Ratio with calcium was $734 and with sevelamer was $1073 respectively, and the incremental Cost-Effectiveness Ratio for the implementation of sevelamer vs. calcium was $6135 .(1 USD = 1.8 BRL$) **CONCLUSIONS:** Sevelamer is a cost-effective drug for the treatment of hyperphosphatemia in patients with CKD in the brazilian context.

PSY27

COST-EFFECTIVENESS OF SEVELAMER IN THE TREATMENT OF HYPERPHOSPHATEMIA ASSOCIATED WITH CHRONIC KIDNEY DISEASE IN ARGENTINA

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OBJECTIVES: The chronic kidney disease (CKD) is associated with an abnormally elevated level of phosphate in the blood, which contributes to the presence of vascular calcifications, thus increasing the probability of the occurrence of cardiovascular events and death in these patients. The objective of this analysis was to evaluate the incremental cost-effectiveness of the use of sevelamer to manage hyperphosphatemia in Argentina **METHODS:** A Markov model was created to estimate the monthly costs and benefits of the treatment with sevelamer or calcium tablets in patients with renal failure considering a temporal horizon of 60 months. The transition probabilities were taken from clinical trials identified through a systematic review of literature. The effectiveness measure considered was an increase in patient survival (months). Only direct costs were considered . Costs were calculated using 2009 prices and are expressed in US dollars. In addition, univariate sensitivity analysis and scenario changes were performed. The discount rate was 5%. Exchange rate was 3.6 Argentine pesos (ARS) per 1 US dollar. **RESULTS:** The expected cost was US$52,558 for calcium and US$69,678 for sevelamer. Patients in calcium group would survive 51 months, compared to the sevelamer group (54 months). The Cost-Effectiveness Ratio with calcium was US$1030 and with sevelamer was US$1280 respectively, and the incremental Cost-Effectiveness Ratio for the implementation of sevelamer vs. calcium was US$5021. ICER of sensitivity analysis doesn't change more than 10% of original scenario. **CONCLUSIONS:** Sevelamer is a cost-effective drug for the treatment of hyperphosphatemia in patients with CKD in the Argentinian context.

PSY28

COST-EFFECTIVENESS ANALYSIS OF CELECOXIB FOR THE MANAGEMENT OF LOW BACK PAIN AT THE SOCIAL SECURITY MEXICAN INSTITUTE

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OBJECTIVES: The aim of this research was to estimate from an institutional perspective the cost-effectiveness of celecoxib against other usual analgesics for the treatment of adult patients with low-back pain. **METHODS:** A complete economic evaluation was conducted using a Markov model. Four health-states were used by the Markov model to assess the disease history within a 12-month time horizon. Treatments used in the evaluation were: Celecoxib 200 mg/day, naproxen 1 gr/day (oral) for 14 days; diclofenac 150 mg/day (intramuscular) for two days followed by diclofenac 200 mg/day (oral) for 12 days; tramadol/acetaminophen 75 mg/day (oral) for 14 days and acetaminophen 1500 mg/day (oral) for 14 days. Effectiveness measures were: mean reduction of pain >50% vs. baseline (through visual analog scale questionnaire) and mean reduction in days of hospitalization. Hospital records were collected in several institutional Mexico City hospitals (n = 15,723). Unit costs were obtained from clinical records and official databases from patients seen in the Social Security Mexican Institute. Probabilistic sensitivity analyses were performed employing bootstrapping techniques and acceptability curves were constructed. **RESULTS:** Celecoxib treatment showed the highest mean pain reduction with 57% [CI95% 55–58%] followed by tramadol/acetaminophen with 46% [45–48%] and acetaminophen with 42% [40–43%]. The celecoxib-treated group also showed the lowest rate of hospitalization 0.17 [0.16–0.18] followed by tramadol/acetaminophen with 0.19 [0.19–0.20] and naproxen with 0.23 [0.23–0.24]. Celecoxib showed an ICER of US$471.71 for the mean pain reduction and US$1,088.48 for the mean reduction of hospitalized days measurement against diclofenac (case base). The latter was confirmed by Monte Carlo first-order simulations and acceptability curves. **CONCLUSIONS:** Celecoxib was more cost-effective as a treatment for adult patients with low back-pain (higher effectiveness with low annual costs) than other usual analgesics.

PSY29

MODELING THE COST-EFFECTIVENESS OF BORTEZOMIB FOR THE INITIAL TREATMENT OF MULTIPLE MYELOMA IN THE UNITED STATES

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OBJECTIVES: The current study aimed to compare the lifetime health outcomes and cost-effectiveness of bortezomib plus melphalan and prednisone (VMP) relative to melphalan and predisone alone (MP), and indirectly to thalidomide plus MP (MPT), for the initial treatment of multiple myeloma (MM) in the non-transplant setting. **METHODS:** A Markov model from a US payer's perspective was developed. Simulations were performed on hypothetical cohorts of newly diagnosed MM patients ineligible for transplant. The model included seven health states representing periods of treatment response, treatment-free interval, progressive disease, second-line treatment, and death. Monthly transition probabilities were estimated from patient-level phase III VISTA trial data for VMP and MP (June 15, 2007 data cut-off) and from the published phase III IFM 99–06 trial for MPT (Facon *et al*, Lancet 2007). Costs included per-protocol drug and medical costs, treatment-related adverse events, second-line treatment, and resource utilization during treatment-free interval and progressive disease. All costs were adjusted to 2009 US dollars. State-specific utility estimates were derived from patient-level EQ-5D data from VISTA using US-specific weights. Health outcomes were expressed in life-years (LYs) and quality-adjusted life-years (QALYs). Both cost and health outcomes were discounted at 3%. **RESULTS:** The model estimated 4.187 LYs (2.994 QALYs) with VMP versus 2.864 LYs (2.049 QALYs) with MP and 4.140 LYs (2.951 QALYs) with MPT. Lifetime direct medical costs are $110,870 for VMP versus $57,864 for MP and $129,902 for MPT. Cost per LY and QALY gained with VMP versus MP is $40,051 and $56,109, respectively. VMP is dominant versus MPT, costing 17.7% less and providing slightly more QALYs. **CONCLUSIONS:** The incremental cost-effectiveness of VMP versus MP is within the generally accepted range of $50,000 to $100,000 per QALY, suggesting that VMP is cost-effective versus MP in the US. VMP is dominant versus MPT, yielding lower costs and better health outcomes.